

REMARKS

Claims 1, 2, 4, 9, 11, 12, and 14-23 remain pending in the application. Claims 25-29 are newly added. Examination and reconsideration in light of the remarks presented herein is respectfully requested.

Applicant's invention provides an improvement in digital broadcast television. Conventional digital broadcasts frequently include two television signals. The first signal contains a main program having an audio and video stream. The audio and video stream usually contains traditional television programming content such as a movie or a situation comedy. The second signal contains a data broadcasting program with supplemental content and control information that allows a viewer to interact with their television set. The data broadcasting program is broadcast concurrently and repeatedly with the main program in a data carousel type format. The data broadcasting program may contain, for example, content related to the main program such as a listing of other works of one of the actors in the main program. This supplemental content may be displayed by a television viewer by making appropriate interactive selections.

One problem with broadcasting the main program and the corresponding data broadcast program concurrently is that when the broadcaster switches from one main program to another there is a delay before the viewer may interact with the new main program. This is because the television set must wait for the data broadcast program associated with the new main program to be transmitted (Application, Figure 19). During this delay the viewer may not interact with their television set. This delay is especially significant for commercials and other short digital programming since a significant portion of the commercial will be over by the time the complete data broadcast program is received.

Another problem with conventional digital broadcasts is the slow response to interactive selections. When a viewer makes an interactive selection, the television set must wait for the appropriate data in the data broadcast program being transmitted in a data carousel format. This frequently results in a noticeable delay when the viewer makes an interactive selection.

Applicant's invention addresses these problems by more efficiently allocating the broadcast bandwidth and storing the digital broadcast program. The invention allocates a portion of the bandwidth to transmitting the data broadcast program associated with a main program before transmitting the main program. A store and execute script may be sent to command the receiver to store and execute the data broadcast program. This allows the television receiver to receive and store the data broadcast program and execute the program concurrently with the main program reducing the amount of time a viewer must wait at the beginning of the main program before the interactive portion of the program is available. Storing the data broadcast program also reduces the interactivity delay characteristic of carousel broadcast formats since the television receiver does not have to wait for the appropriate digital broadcast data in the data carousel to be broadcast. Thus, Applicant's invention reduces the interaction time latencies of conventional systems providing the viewer with a more reactive and pleasant interactive viewing experience.

Claims 1, 2, 4, 9, 11, 12, 14 and 23 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Eldering* (US Pat No 6,615,039) in view of *Suzuki* (U.S. Pat No. 6,401,243). Applicant traverses.

As the Examiner is aware, the hard question is whether the combination is based upon hindsight from the present teaching rather than what would be obvious apart from the present teaching to a person of ordinary skill in this field.

As set forth in *In re Kahn*, 441 F.3d 977, 987-988 (Fed. Cir. 2006):

The motivation-suggestion-teaching test picks up where the analogous art test leaves off and informs the *Graham* analysis. [*Graham v. John Deere Co.*, 383 U.S. 1, 13-14 (1966).]

To reach a non-hindsight driven conclusion as to whether a person having ordinary skill in the art at the time of the invention would have viewed the subject matter as a whole to have been obvious in view of multiple references, the Board must provide some rationale, articulation, or reasoned basis to explain why the conclusion of obviousness is correct. The requirement of such an explanation is consistent with governing obviousness law. . . .

* * *

A suggestion, teaching, or motivation to combine the relevant prior art teachings does not have to be found explicitly in the prior art, as “the teaching, motivation, or suggestion may be implicit from the prior art as a whole, rather than expressly stated in the references. . . . The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art.” However, rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be *some* articulated reasoning with *some* rational underpinning to support the legal conclusion of obviousness. This requirement is as much rooted in the Administrative Procedure Act [for our review of Board determinations], which ensures due process and non-arbitrary decision making, as it is in §103.

As can be appreciated, the more that the cited references must be modified to meet the outstanding claims, the more likely that an unintended issue of hindsight may drive the rejection. This is particularly true for an Examiner who is attempting to provide a diligent effort to ensure that only patentable subject matter occurs. The difficult issue is to step back from the zeal of the examination process and to appreciate that the Patent Examiner has to wear both hats of advocating a position relative to the prior art, while at the same time objectively rendering in a judge-like manner, a decision on the patentability of the present claims.

Eldering discloses a targeted advertising system based on subgroups (*Eldering*, Abstract). A series of routers 704 routes targeted advertising (i.e. AD1, AD2, AD3) and a program stream

701 to targeted subscribers (*Eldering*, Figure 6). The subscriber's receiver has an advertisement insertion module 806 and an advertising timing module 804 that bundles the targeted advertisements with the program stream for presentation to the viewer at the appropriate time (*Eldering*, Figure 7).

Claims 1, 2, 4, 9, 11, 12, 14 and 23 include many limitations that are not disclosed or suggested by *Eldering* or *Suzuki*. Applicant will address some of these limitations.

Claims 1, 2, 4, 9, 11, 12, 14 and 23 include a transmission unit (step) for repeatedly transmitting the scripts. The Office Action asserts this limitation is taught by *Eldering* (Office Action, Page 4, Lines 5-7). The Office Action interprets "sending data whenever the channel is idle" as repeatedly sending the data (Office Action, Page 4, Lines 7-8). Applicant traverses.

The cited passage refers to auxiliary data that are inserted between the packets of primary programs whenever the distribution channel is idle (*Eldering*, Column 10, Lines 38-39). The auxiliary data is transmitted only once. This is apparent, since *Eldering* teaches that it becomes possible to attain 100% channel utilization as long as there exists some non-real data in the queue awaiting distribution (*Eldering*, Column 10, Lines 30-33). If the auxiliary data were repeatedly transmitted as in the applicant's invention, *Eldering*'s queue would never be empty.

Claims 1, 2, 4, 9, 11, 12, 14 and 23 include a script generation unit (step) that instructs the receiver to reproduce program data of the specific program stored in a storage unit (step). The Office Action asserts *Suzuki* teaches this limitation (Office Action, Page 22, Lines 13-19). Applicant traverses.

The Office Action interprets a script to be a set of instructions for an application and that the instructions taught by *Suzuki* are equivalent to Applicant's recited script (Office Action, Page 22, Lines 17-19). Applicant's scripts, however, are not the same as the asserted set of

instructions for an application. Applicants scripts are “repeatedly transmitted” from the broadcasting apparatus. Suzuki’s instruction sets are preloaded.

These limitations recite a unique feature of Applicant’s invention. The broadcast apparatus transmits the scripts repeatedly allowing the receiver to accumulate scripts. The broadcasting apparatus may then send an execute script command at the appropriate time. Splitting the script transmission function from the script execution function allows the broadcaster to more effectively manage bandwidth. Both *Eldering* and *Suzuki* fail to disclose or suggest transmitting a script and executing the script at different times.

The broadcast apparatus (method) of Claims 1, 2, 4, 9, 11, 12, 14 and 23 include a control unit (step) for controlling the transmission unit transmitting storage instructions and reproduction instructions at different times. The Office Action asserts this limitation is taught by *Eldering* (Office Action, Page 4, Lines 5-11). Applicant traverses.

The cited passages and figure relates to distribution paths to subgroups that have been categorized at the router level (*Eldering*, Figure 3 element 301, Column 5, Lines 28-43, Column 6, Lines 40-44). *Eldering*’s reproduction instruction, however, does not occur in response to a control unit but rather in response to a viewers input. Referring to *Eldering*’s flowchart the reproduction request comes from the user S51 (*Eldering*, Figure 18). The reproduction request is transmitted to a cable television station. The cable television station then sends a reproduction signal. *Eldering*’s system is essentially a video on demand system. The viewer controls the reproduction time not the broadcast apparatus.

Claims 1, 2, 4, 9, 11, 12, 14 and 23 include a transmit unit (step) that repeatedly transmits the program data of the specific program during the reproduction time period. The Office Action asserts that this limitation is taught by *Eldering* (Office Action, Page 4, Line 3). Applicant traverses.

The cited passage refers to auxiliary data that are inserted between the packets of primary programs whenever the distribution channel is idle (*Eldering*, Column 10, Lines 38-39). As explained above, *Eldering's* auxiliary data is not repeatedly transmitted. This is evident because the *Eldering's* device inserts an advertisement from the auxiliary data into the program stream to form the presentation stream. Applicant's feature of repeatedly transmitting the specific program provides an advantage in that the viewer has specific program information even if the receiver is powered on in the middle of a broadcast time period.

Suzuki discloses a two way information transmission system, method and terminal (*Suzuki*, Abstract). *Suzuki's* system includes an information distribution center connected with a plurality of subscriber terminals (*Suzuki*, Column 3, Lines 16-17). The information distribution center transmits information to the subscriber's terminals when the subscriber's terminal makes a request (*Suzuki*, Column 3 Line 66 to Column 4 Line 1). *Suzuki's* system resembles a movie on demand type system where a user makes a movie selection on a subscriber terminal and the distribution center responds in nearly real time to transmit the selected movie.

Claims 1, 2, 4, 9, 11, 12, 14 and 23 also include a transmission means that repeatedly transmits scripts in a time period to which the specific program has been allotted. The Office Action asserts this limitation is taught by *Eldering* (Office Action, Page 4, Lines 5-8). Applicant traverses.

The passage cited by the Office Action refers to a program map and not a script as recited in the claims (Column 8, Lines 34-36, Column 10, Lines 37-45). *Eldering's* program map manages multiple programs included in an MPEG data transmission stream. Applicant's scripts are programs that are launched in response to a message.

Claims 1, 2, 4, 9, 11, 12, 14 and 23 include a transmission unit wherein the reproduction time period of the specific program is the same as a broadcast time period of a commercial. The

Office action asserts *Eldering* teaches this limitation (Office Action, Page 4, Lines 17-20). The Office Action asserts that *Eldering* shows that a commercial could be broadcast at 1.5 Mbps, while the program itself would require 27-155 Mbps (Office Action, Page 4, Lines 21-22). The Office Action further asserts that if the commercial 0.5 minutes and the program (were) 29.5 minutes (then) the program would need to be broadcast at 88.5 Mbps (Office Action, Page 4, Lines 23-24). Applicant traverses.

The cited section refers to a frequency band used at for transmission of *Eldering's* program and advertisement streams. *Eldering's* frequency band is a far cry from a reproduction time period of the specific program that is the same as a broadcast time period of a commercial.

Newly drafted, Claims 24-29 recite embodiments of the invention previously disclosed but not claimed. Claim 24 recites a broadcasting method for reducing television receiver latencies in displaying the interactive content portion of broadcast television commercials, the method comprising the steps of assigning a television program to a first time slot C1001 and a commercial to a second time slot immediately after the first time slot C1002; allocating a first portion of the available bandwidth for the first time slot (length of C1001) to an audio-video stream for the television program C1001 (0.7D); allocating a second portion of the available bandwidth for the first time slot to a specific program (S1001-parallel to C1001) having interactive content for the commercial; allocating a first portion of the available bandwidth for the second time slot to the specific program (S1001) (Application Figure 15). The claim also recites transmitting the audio-visual stream of the television program during the first times slot; repeatedly transmitting the specific program during the first time slot; transmitting the commercial during the second time slot; and repeatedly transmitting the specific program during the first time slot (Application, Figure 1 elements 105, 110, 111 and 112).

Claims 25-29 recite embodiments of the invention having additional features. Support for these features can also be found in the specification (Application, Page 37 Line 12 – Page 38 Line 13).

Claims 24-29 recite numerous limitations not disclosed in *Eldering* or *Suzuki* as explained above. For example, the bandwidth allocation features as well as the commercial carousel transmission features are neither disclosed nor suggested by either *Eldering* or *Suzuki*.

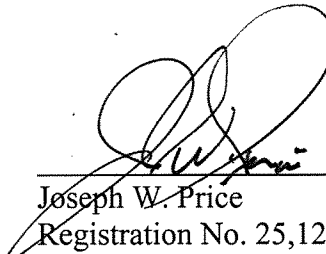
For the reasons stated above Applicant submit that claims 1, 2, 4, 9, 11, 12, 14 and 23 are patentable over *Eldering* in view of *Suzuki* and respectfully requests that this rejection be withdrawn.

In view of the above comments and the further clarification set forth in the current claims, it is believed the case is now in condition for allowance and early notification of the same is requested.

If the Examiner believes a telephone interview will assist in the prosecution of this application, the undersigned attorney can be contacted at the listed phone number.

Very truly yours,

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